CLAIMS

What is claimed is:

1. An virtual metropolitan area network (VMAN) architecture system comprising:

a metropolitan area network (MAN) servicing at least one of a plurality of customers, each customer having at least one domain;

a first switch capable of segregating data packets from a one of the plurality of customers into a VMAN, the VMAN servicing at least one of a plurality of domains, each domain being associated with the same one of the plurality of customers.

2. The VMAN architecture system of claim 1, wherein segregating the data packets comprises:

tagging a data packet from the at least one of the plurality of domains with a VMAN ID identifying the customer with which the domain is associated; and

forwarding the tagged data packet to a second one of the plurality of domains associated with the same VMAN ID.

3. The VMAN architecture system of claim 2, wherein forwarding the tagged data packets further comprises:

routing the tagged data packets to a second switch that forwards only those tagged data packets having a VMAN ID that matches a VMAN ID with which the second one of the plurality of domains is associated, to a destination host specified in the data packet.

4. The VMAN architecture system of claim 1, wherein the first switch is an edge switch located at the edge of the MAN.

5. The VMAN architecture system of claim 3, wherein the second switch is an edge switch located at the edge of the MAN.

6. The VMAN architecture system of claim 3, wherein the routing is performed by a core switch located in the core of the MAN.

7. The VMAN architecture system of claim 3, wherein the customer domain is comprised of at least one of a plurality of VLANs associated with the customer, and wherein a VLAN ID identifying the at least one VLAN is included in the data packet header.

8. The VMAN architecture system of claim 3, wherein the specification identifying the destination host in the data packet includes the VLAN ID.

9. The VMAN architecture system of claim 1, wherein the switch is further capable of segregating data packets from a multiple of the plurality of customers into a second VMAN, the second VMAN providing to the multiple of the plurality of customers a common third-party service.

10. The VMAN architecture system of claim 6, wherein the common third-party service is a connection to an Internet Service Provider.

11. The VMAN architecture system of claim 6, wherein the common third-party service is a connection to an Application Service Provider.

12. A method for a VMAN protocol comprising:

receiving a data packet from a local customer domain at a local switch located at an edge of a MAN;

adding a VMAN tag to the data packet at the switch, the VMAN tag comprising a type and an ID, the ID identifying a portion of the MAN associated with the local customer domain;

receiving the tagged data packet at a remote switch located at another edge of the MAN;

stripping the VMAN tag from the data packet at the remote switch; and

forwarding the stripped data packet to a remote customer domain controlled by the remote switch, the remote customer domain matching the local customer domain.

13. The method of claim 12, wherein the local customer domain and the remote customer domain are comprised of hosts belonging to identical VLANs.

14. The method of claim 12, further comprising:

routing the tagged data packet to the remote switch via a core switch in the MAN.

15. The method of claim 12 wherein the data packet received from the local customer domain is an 802.1Q tagged frame.

16. The method of claim 12 wherein the data packet received from the local customer domain is an untagged frame.

17. The method of claim 15, wherein adding the VMAN tag to the data packet comprises inserting the VMAN type and the VMAN tag between two well-known fields of the 802.1Q tagged frame.

18. The method claim 17, wherein the first well-known field of the 802.1Q tagged frame is the Media Access Control (MAC) source address, and the second well-known field of the 802.1Q tagged frame is a VLAN type.

19. The method of claim 18, wherein the VLAN type is a hexadecimal value "8100" having a length of 2 bytes of

20. The method of claim 12, wherein the VMAN type is a hexadecimal value "8181" having a length of 2 bytes.

21. The method of claim 12, wherein the VMAN ID is a hexadecimal value having a length of 2 bytes.

22. The method of claim 12, wherein adding the VMAN tag results in a tagged data packet having a length 4 bytes more than the length of the data packet received from the local customer domain.

23. An article of manufacture comprising a machine-accessible medium having stored thereon a plurality of instructions for processing a VMAN protocol, comprising:

receiving a data packet from a local customer domain at a local switch located at an edge of a MAN;

adding a VMAN tag to the data packet at the switch, the VMAN tag comprising a type and an ID, the ID identifying a portion of the MAN associated with the local customer domain;

receiving the tagged data packet at a remote switch located at another edge of a MAN;

stripping the VMAN tag from the data packet at the remote switch; and

forwarding the stripped data packet to a remote customer domain controlled by the remote switch, the remote customer domain matching the local customer domain.

24. The article of manufacture of claim 22, wherein the local customer domain and the remote customer domain are comprised hosts belonging to identical VLANs.

25. The article of manufacture of claim 22, further comprising:

routing the tagged data packet to the remote switch via a core switch in the MAN.

26. The article of manufacture of claim 22, wherein the data packet received from the local customer domain is an 802.1Q tagged frame.

27. The article of manufacture of claim 22, wherein the data packet received from the local customer domain is an untagged frame.

28. The article of manufacture of claim 26, wherein adding the VMAN tag to the data packet comprises inserting the VMAN type and the VMAN tag between two well-known fields of the 802.1Q tagged frame.

29. The article of manufacture of claim 27, wherein the first well-known field of the 802.1Q tagged frame is the Media Access Control (MAC) source address, and the second well-known field of the 802.1Q tagged frame is a VLAN type.

30. The article of manufacture of claim 22, wherein the VLAN type is a hexadecimal value of "8100" having a length of 2 bytes.

31. The article of manufacture of claim 22, wherein the VMAN type is a hexadecimal value of "8181" having a length of 2 bytes.

32. The article of manufacture of claim 22, wherein the VMAN ID is a hexadecimal value having a length of 2 bytes.

33. The article of manufacture of claim 22, wherein adding the VMAN tag results in a tagged data packet having a length 4 bytes more than the length of the data packet received from the local customer domain.